

### AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An isolated mutant water-soluble glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme, wherein said mutant is a mutant of a glucose dehydrogenase comprising the amino acid sequence of SEQ ID NO:1, and wherein said mutant consists of an amino acid substitution selected from the group consisting of:

(1) glutamine at position ~~192~~ <sup>(168<sup>th</sup>)</sup> 168 glutamine of SEQ ID NO:1[~~1~~]] is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid ~~in SEQ ID NO:1~~, optionally combined with (a) a substitution wherein aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> 143 aspartate of SEQ ID NO:1[~~1~~]] is substituted with glutamic acid ~~in SEQ ID NO:1~~ or (b) a substitution wherein asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> 428 asparagine of SEQ ID NO:1[~~1~~]] is substituted with threonine ~~in SEQ ID NO:1~~;

(2) leucine at position ~~193~~ <sup>(169<sup>th</sup>)</sup> 169 leucine of SEQ ID NO:1[~~1~~]] is substituted with alanine, glycine, methionine, tryptophan or lysine ~~in SEQ ID NO:1~~, optionally combined with (a) a substitution wherein aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> 143 aspartate of SEQ ID NO:1[~~1~~]] is substituted with glutamic acid ~~in SEQ ID NO:1~~ or (b) a substitution wherein asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> 428 asparagine of SEQ ID NO:1[~~1~~]] is substituted with threonine ~~in SEQ ID NO:1~~; and

(3) aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> 143 aspartate of SEQ ID NO:1[~~1~~]] is substituted with glutamic acid ~~in SEQ ID NO:1~~; and asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> 428 asparagine of SEQ ID NO:1[~~1~~]] is substituted with threonine ~~in SEQ ID NO:1~~.

2-23. (Cancelled).

24. (Previously Presented) A glucose assay kit comprising the modified glucose dehydrogenase as claimed in claim 1.

25. (Previously Presented) A glucose sensor comprising the modified glucose dehydrogenase as claimed in claim 1.

26. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position ~~192~~ <sup>(168<sup>th</sup>)</sup> ~~168~~ <sup>168</sup> glutamine of SEQ ID NO:1[[D]] is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid ~~in SEQ ID NO:1.~~

27. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position ~~193~~ <sup>(169<sup>th</sup>)</sup> ~~169~~ <sup>169</sup> leucine of SEQ ID NO:1[[D]] is substituted with alanine, glycine, methionine, tryptophan or lysine ~~in SEQ ID NO:1.~~

28. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> ~~143~~ <sup>143</sup> aspartate of SEQ ID NO:1[[D]] is substituted with glutamic acid ~~in SEQ ID NO:1,~~ and asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> ~~428~~ <sup>428</sup> asparagine of SEQ ID NO:1[[D]] is substituted with threonine ~~in SEQ ID NO:1.~~

29-32. (Cancelled).

33. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position ~~192~~ <sup>(168<sup>th</sup>)</sup> ~~168~~ <sup>168</sup> glutamine of SEQ ID NO:1[~~1~~] is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid ~~in SEQ ID NO:1~~, and aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> ~~143~~ <sup>143</sup> aspartate of SEQ ID NO:1[~~1~~] is substituted with glutamic acid ~~in SEQ ID NO:1~~.

34. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein glutamine at position ~~192~~ <sup>(168<sup>th</sup>)</sup> ~~168~~ <sup>168</sup> glutamine of SEQ ID NO:1[~~1~~] is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid ~~in SEQ ID NO:1~~, and asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> ~~428~~ <sup>428</sup> asparagine of SEQ ID NO:1[~~1~~] is substituted with threonine ~~in SEQ ID NO:1~~.

35. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position ~~193~~ <sup>(169<sup>th</sup>)</sup> ~~169~~ <sup>169</sup> leucine of SEQ ID NO:1[~~1~~] is substituted with alanine, glycine, methionine, tryptophan or lysine ~~in SEQ ID NO:1~~ and aspartate at position ~~167~~ <sup>(143<sup>rd</sup>)</sup> ~~143~~ <sup>143</sup> aspartate of SEQ ID NO:1[~~1~~] is substituted with glutamic acid ~~in SEQ ID NO:1~~.

36. (Currently Amended) The mutant glucose dehydrogenase as claimed in claim 1, wherein leucine at position ~~193~~ <sup>(169<sup>th</sup>)</sup> ~~169~~ <sup>169</sup> leucine of SEQ ID NO:1[~~1~~] is substituted with alanine, glycine, methionine, tryptophan or lysine ~~in SEQ ID NO:1~~ and asparagine at position ~~452~~ <sup>(428<sup>th</sup>)</sup> ~~428~~ <sup>428</sup> asparagine of SEQ ID NO:1[~~1~~] is substituted with threonine ~~in SEQ ID NO:1~~.

37. (Currently Amended) An isolated mutant water-soluble glucose dehydrogenase having pyrroloquinoline quinone as a coenzyme, wherein said mutant is a mutant of a glucose dehydrogenase comprising the amino acid sequence of SEQ ID NO:1, and wherein said mutant comprises an amino acid substitution wherein glutamine at position ~~192~~ <sup>(168<sup>th</sup>)</sup> 168 ~~glutamine~~ of SEQ ID NO:1[[I]] is substituted with glycine, glutamic acid, leucine, phenylalanine, serine or aspartic acid ~~in SEQ ID NO:1.~~